

A New Species and a New Record of the Diastylidae (Crustacea: Cumacea) from Korea

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ABSTRACT

In this study, a new species, *Dimorphostylis breviplicata* n. sp. is described and illustrated on the basis of specimens collected from the shallow Korean waters. This new species is similar to *Dimorphostylis brevicaudata* (Zimmer, 1903), *Dimorphostylis acroplicata* Harada, 1960 and *Dimorphostylis valida* Gamô, 1962 in that the carapace has three pairs of oblique ridges on the surface. However, the new species is distinguished by the combination of the following features: the middle oblique ridge is short and not joined to the other oblique ridges; the transverse ridge is absent on the frontal lobe; the dorso-median process on the pereonite 5 is only barely visible; the male telson has no short stout seta on the both lateral margins; the length ratio of the first to remaining articles combined on the male uropod is 1 : 0.7. A key to the Korean *Dimorphostylis* species is provided. Also, *Diastylis alaskensis* Calman, 1912 is redescribed as a new recorded species of the Korean fauna.

Keywords: taxonomy, Cumacea, Diastylidae, *Dimorphostylis breviplicata*, new species, *Diastylis alaskensis*, Korea

INTRODUCTION

Diastylidae is a family of the biggest and predominantly cold-water favoring cumaceans, and contains around 285 species in 20 genera to date (Watling and McCann, 1997; Shalla, 2011). The members of Diastylidae are found throughout the world's oceans (Alberico and Mühlenhardt-Siegel, 2010). Of these, the genus *Dimorphostylis* has been established by Zimmer (1921) for *D. asiatica* from Japanese waters and 26 species have been reported, including the most recent two new species, *D. maledivensis* and *D. namhaedoensis* (Mühlenhardt-Siegel, 1996; Lee and Lee, 2002). Most of these species are distributed in the Australian and Japanese waters. The genus *Diastylis* is one of the largest genera, with over 100 species currently known worldwide (Gerken, 2005).

The Korean *Dimorphostylis* species have been well documented and nine species have been recorded by Kang and Lee (1995), Hong et al. (1998), Lee and Lee (2002, 2007) and Lee et al. (2003): *Dimorphostylis asiatica* Zimmer, 1921, *D. varida* Harada, 1960, *D. acroplicata* Harada, 1960, *D. brevicaudata* (Zimmer, 1903), *D. hisuta* Gamô, 1960, *D. namhaedoensis* Lee and Lee, 2002, *D. manazuruensis*

Gamô, 1960, *D. longicauda* Gamô, 1962, and *D. echinata* Gamô, 1962. Among these species, *D. brevicaudata* was recorded by Hong et al. (1998) on the basis of the specimens collected from the Yellow Sea. However, their specimens did not coincide with *D. brevicaudata*, which was originally described by Zimmer (1903), in regards to the unique pattern of the oblique ridges on the carapace. Therefore, this species is described and illustrated as new to science, which was named *Dimorphostylis breviplicata* n. sp. in this study. A key to the Korean *Dimorphostylis* species is also provided.

The Korean *Diastylis* species are poorly known: *D. koreana* Calman, 1911, *D. paratricinta* Kang and Lee, 1996, *Diastylis implicata* Park and Hong, 1999, and *D. loricata* Lomakina, 1955 (Kang and Lee, 1996; Park and Hong, 1999). In this study *Diastylis alaskensis* Calman, 1912 is redescribed as new to the Korean cumacean fauna.

MATERIALS AND METHODS

The specimens were collected mainly using a light-trap (Holmes and O'Connor, 1988; Kim, 1992) in shallow Korean

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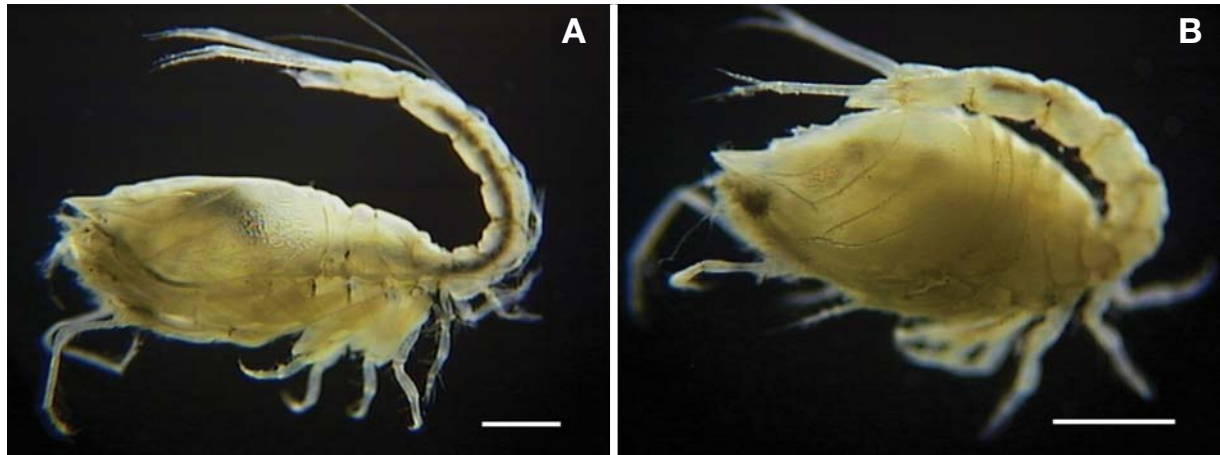


Fig. 1. *Dimorphostylis breviplicata* new species, specimens preserved in alcohol. A, Habitus of male, lateral; B, Habitus of female, lateral. Scale bars: A, B=1 mm.

waters, from 1993 to 2008. The specimens were fixed in 70–80% ethanol. The specimens were dissected in glycerol on cobb's aluminum hollow slide. Drawings and measurements were performed with the aid of a drawing tube equipped on a light microscope. Body length was measured from the anterior tip of the carapace to the posterior end of the pleonite 6. The lengths of the appendages were measured along the mid-line of each appendage and excluded the inflated outer angle. The materials are deposited at the National Institute of Biological Resources (NIBR), Incheon, Korea, and the Department of Life Sciences, Dankook University, Cheonan, Korea.

SYSTEMATIC ACCOUNTS

Order Cumacea Kröyer, 1846
Family Diastylidae Bate, 1856
Genus *Dimorphostylis* Zimmer, 1921

¹**Dimorphostylis breviplicata* n. sp. (Figs. 1-6)

Dimorphostylis brevicaudata: Hong et al., 1998: 104, figs. 4–6 [not *Dimorphostylis brevicaudata* (Zimmer, 1903)].

Material examined. Holotype (NIBRIV0000243472), ♂, paratypes (NIBRIV0000243473, NIBRIV0000243474, DKU201202), 6♂♂, 3♀♀, 5 Juv., Korea: Chungcheongnam-do, Taean-gun, Gausi Island, 36°40'N, 126°04'E, 8 Jul 2000, Kim YH, collected from light-trap on bottom, depth 3–5 m.

Additional material examined. 31♂♂, 1♀, Korea: Gyeong-

gi-do: Ongjin-gun, Daecheong Island, 10 Aug 1999, Lee CH; 5♂♂, Ongjin-gun, Socheong Island, 12 Aug 1999, Lee CH; 1♀, Ongjin-gun, Baekryeong Island, 14 Oct 2000, Kim YH; 3♂♂, Chungcheong-do: Taean-gun, Sabsi Island, 8 May 1993, Kang BJ; 1♂, 3♀♀, 1Juv., Taean-gun, Mallipo, 18 Jun 1997, Lee CM; 3♂♂, 2♀♀, 3Juv., Taean-gun, Hakampo, 25 Jun 1998, Lee CM; 13♂♂, 11♀♀, Boryeong-si, Daecheon Port, 12 Feb 2007, Song SJ; 1♂, 1♀, Jeolla-do: Boseong-gun, Yulpo, 20 Sep 1993, Kang BJ; 1♀, Yeosu-si, Dolsan Island, 23 Sep 1993, Kang BJ; 1♀, Wando-gun, Cheongsan Island, 20 May 1998, Lee KS; 1♂, Wando-gun, Cheongsan Island, 21 Aug 2001, Lee CM; 5♂♂, Muang-gun, Seongnae, 11 Oct 1998, Lee CM; 2♀♀, Yeongam-gun, Yongdang, 19 Nov 2000, Kim YH; 1♂, 1♀, Goheung-gun, Gijuk Port, 25 Jun 2008, Hong SS; 1♀, Gyeongsang-do: Busan-si, Dadaepo, 14 Mar 1993, Kang BJ; 1♂, Gangwon-do: Samcheok-si, Samcheok Port, 6 Aug 1994, Kang BJ; 1♂, Donghae-si, Donghae Port, 21 Aug 2001, Lee CM.

Description. Adult male: Body (Fig. 2A) length 6.6 mm, excluding telson and uropods. Carapace (Fig. 2A, B) 0.35 times as long as body length, 1.5 times as long as wide, twice as long as deep, without a transverse ridge on frontal lobe; both sides of carapace with 1 pair of frontal ridges, 3 pairs of oblique ridges; anterior oblique ridge beginning at front portion of frontal ridge, running upward, turning abruptly forward to merge with dorsal submedian carina, and with 1 small branch ridge directing downward at anterior turning point; middle oblique ridge short, running straight upward, but not joining submedian carina; posterior oblique ridge beginning near anterior part of middle oblique ridge, running upward and turning abruptly forward to merge with

Korean name: ¹*짧은주름이형올챙이새우 (신칭)

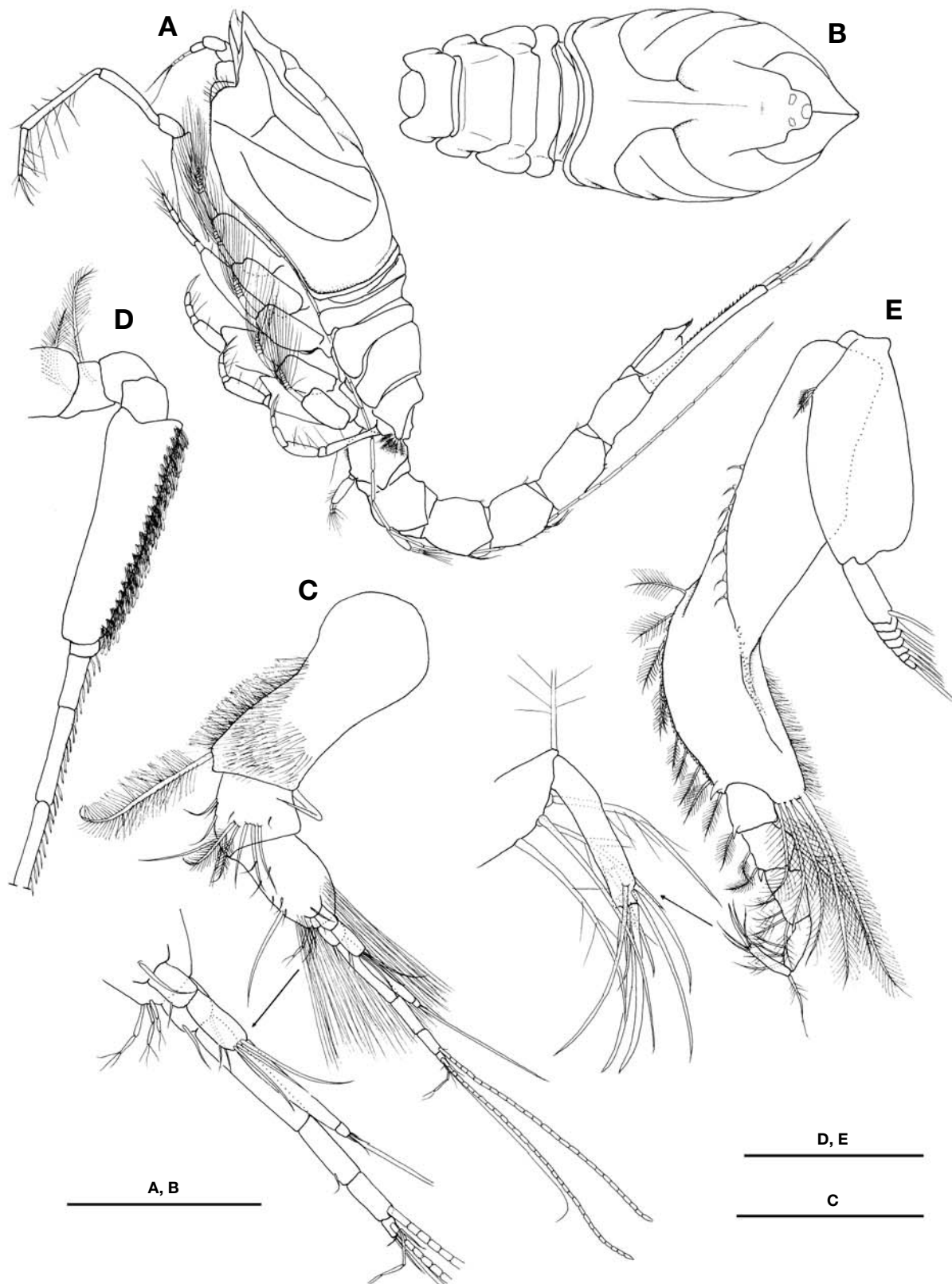


Fig. 2. *Dimorphostylis breviplicata* new species, male. A, Habitus, lateral; B, Cephalothorax, dorsal; C, Antenna 1; D, Antenna 2; E, Maxilliped 3. Scale bars: A, B=1.5 mm, C=0.3 mm, D, E=0.5 mm.

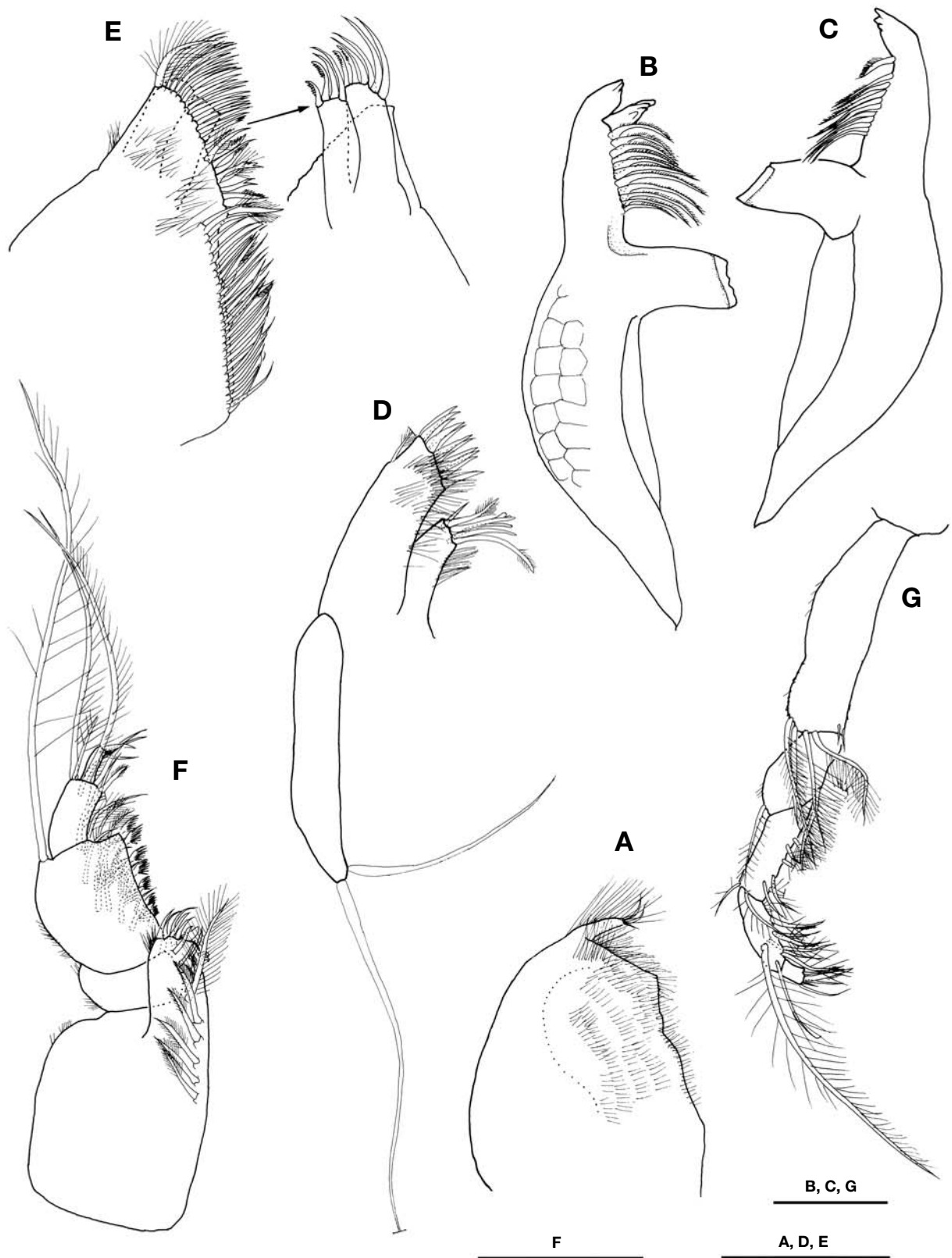


Fig. 3. *Dimorphostylis breviplicata* new species, male. A, Labium; B, Left mandible; C, Right mandible; D, Maxilla 1; E, Maxilla 2; F, Maxilliped 1; G, Maxilliped 2. Scale bars: A, D, E=0.3 mm, B, C, G=0.2 mm, F=0.4 mm.

anterior oblique ridge; dorsal groove formed on postero-medial surface of carapace; antennal notch deeply concave and antero-lateral corner round; antero-lateral margin serrated faintly; pseudorostral lobes nearly twice as long as ocular lobe; ocular lobe round, with 3 lenses.

Thorax (Fig. 2A, B) 0.65 times as long as carapace length, 0.2 times as long as body length.

Abdomen (Fig. 2A) 0.8 times as long as cephalothorax.

Antenna 1 (Fig. 2C) peduncle triarticulate; first article 1.4 times as long as remaining articles combined, with numerous hairs, 1 bent simple seta, 1 strong plumose seta distally on surface; second article 0.3 times as long as first article, with 1 sensory seta, 2 plumose setae, 3 short, 6 long simple setae; third article 1.7 times as long as second article, with numerous long sensory hairs on distal margin, 3 sensory setae on outer corner, 1 long, 7 short simple setae near outer margin. Main flagellum 5-articulate; second article longest, 3.4 times as long as first article; fourth article 0.7 times as long as third article, with 1 aesthetasc; fifth article small, with 1 aesthetasc, 1 sensory seta, 1 long, 2 short simple setae. Accessory flagellum 4-articulate, 0.8 times as long as main flagellum; third article longest, slightly longer than length of first and second articles combined; fourth article very small, with 1 long seta, 2 short setae.

Antenna 2 (Fig. 2D) long, extending beyond telson; peduncle 5-articulate; second article with 2 plumose setae.

Labium (Fig. 3A) with numerous hairs on inner margin; apex of process with 3 simple setae.

Left mandible (Fig. 3B) boat-shaped, with 11 pectinated setae between lacinia mobilis and pars molaris; pars incisiva with 3 teeth; lacinia mobilis with 4 teeth.

Right mandible (Fig. 3C) with 11 pectinated setae between pars incisiva and pars molaris; pars incisiva with 4 teeth.

Maxilla 1 (Fig. 3D) protopod with 11 stout setae on terminal margin, outer margin with 1 plumose distal seta; endite with 3 simple setae, 2 pectinated setae, 1 trifold seta on terminal margin.

Maxilla 2 (Fig. 3E) protopod with 25 simple setae, 2 strong pectinated setae on inner margin, with 25 simple setae, 2 bifid setae, 3 serrated setae, 4 strong plumose setae, 1 pectinated seta on terminal margin; endites exceeding protopod, inner endite with 2 simple setae, 2 comb-like setae on terminal margin, outer endite with 4 simple setae, 2 comb-like setae on terminal margin.

Maxilliped 1 (Fig. 3F) protopod inflated, carpus with 10 plumose setae, 7 comb-shaped setae near inner margin, 1 long plumose seta on outer corner; endite extending beyond merus of protopod, with 7 large plumose setae, 3 simple setae, 2 hook-like setae near inner margin, 5 simple setae, 1 specialized tooth on terminal margin.

Maxilliped 2 (Fig. 3G) basis 0.8 times as long as remaining

articles combined, with 4 long plumose setae, 2 short simple setae near distal margin.

Maxilliped 3 (Fig. 2E) basis 1.9 times as long as remaining articles combined, inner margin serrated, with 10 plumose setae, 1 row of setae (about 7 short simple setae) near middle portion, outer corner rather inflated, with 6 long plumose setae (one of them rather short), outer margin with numerous hair-like setae distally.

Pereopod 1 (Fig. 4A) basis 0.85 times as long as remaining articles combined, outer margin with several short simple and plumose setae; proximal inner and distal margins serrated, with 27 plumose setae, 5 short simple setae; propodus 1.9 times as long as dactylus, with 3 short, 6 long simple setae on inner margin, 6 short simple setae on outer margin.

Pereopod 2 (Fig. 4B) basis 1.3 times as long as remaining articles combined, inner corner very inflated, with 5 plumose setae, outer margin serrated, with 10 plumose setae, dorsal surface with 2 rows of plumose setae.

Pereopod 3 (Fig. 4C) basis subequal in length to remaining articles combined, inner corner very inflated.

Pereopod 4 (Fig. 4D) basis 0.9 times as long as remaining articles combined, inner corner inflated.

Pereopod 5 (Fig. 4E) basis 0.6 times as long as remaining articles combined, inner corner inflated.

Pleopod 1 (Fig. 5A) basis 3.3 times as long as inner ramus, with 4 setae (having several tubercles near distal part), 5 plumose setae on inner margin, 8 simple setae on dorsal surface and inner margin; inner ramus uniarticulate, with 7 long plumose setae; outer ramus biarticulate, 0.6 times as long as inner ramus, second article with 4 long plumose setae.

Pleopod 2 (Fig. 5B) basis 3.1 times as long as inner ramus, with 3 setae (having several tubercles near distal part) on inner margin, 5 simple setae on dorsal surface; inner ramus uniarticulate, with 4 long plumose setae; outer ramus biarticulate, second article with 1 simple seta, 3 long plumose setae.

Telson and uropods (Fig. 5C). Telson slightly longer than length of pleonite 6, pre-anal section with U-shaped dorsal projection, post-anal section slightly shorter than half of pre-anal section, with 1-2 pairs of fine setae, 1 pair of simple setae on both lateral margins, terminal margin with 3 short stout setae, middle seta slightly longer than lateral setae. Uropod peduncle 2.2 times as long as telson, with 16 short stout setae on inner margin; endopod triarticulate, 0.4 times as long as peduncle, first article with 8 short stout setae on inner margin, second article with 3 short stout setae on inner margin, third article with 1 short stout seta and 1 simple seta on inner margin, 1 short simple seta on outer corner, 1 robust terminal seta; exopod biarticulate, 0.8 times as long as endopod, second article with 8 simple setae on surface and outer margin, 1 simple distal seta on inner margin, 2



Fig. 4. *Dimorphostylis breviplicata* new species, male. A, Pereopod 1; B, Pereopod 2; C, Pereopod 3; D, Pereopod 4; E, Pereopod 5. Scale bars: A-D=0.5 mm, E=0.3 mm.

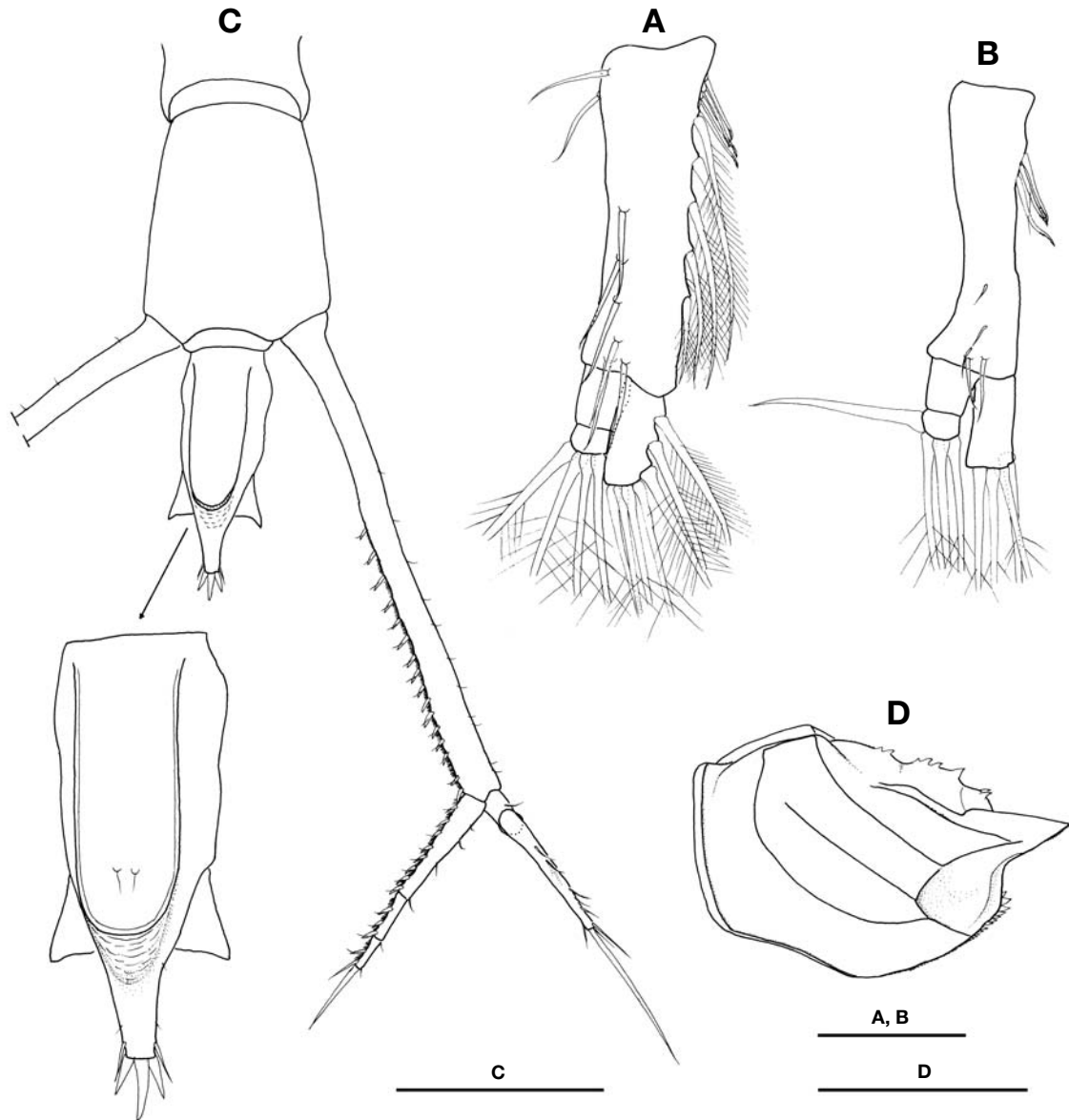


Fig. 5. *Dimorphostylis breviplicata* new species, male. A, Pleopod 1; B, Pleopod 2; C, Telson, uropod and pleonite 6, dorsal; D, Carapace of subadult male, lateral. Scale bars: A, B=0.1 mm, C=0.5 mm, D=1.5 mm.

simple setae (one of them long) on terminal margin.

Subadult male: Shape of carapace (Fig. 5D) closely allied as in female, serrated (with about 6 teeth) on distal carina of frontal lobe; antero-lateral portion depressed, with strong serrations on margin.

Marsupial female: Body (Fig. 6A) length 6.2 mm, excluding telson and uropods, covered with numerous hair-like setae on surface. Carapace (Fig. 6A, B) 0.35 times as long as body length, 1.2 times as long as wide, twice as long as deep, 1.65 times as wide as deep, with 1 pair of teeth on ocular lobe, 4-6 teeth on dorsal carina of frontal lobe, pattern of ridges same

as in male, pseudorostral lobes 2.6 times as long as ocular lobe width, pair of setae anteriorly on ocular lobe.

Thorax (Fig. 6A, B) 0.65 times as long as carapace length, 0.2 times as long as body length.

Abdomen (Fig. 2A) 0.75 times as long as cephalothorax.

Pereopod 1 (Fig. 6C) propodus 2.2 times as long as dactylus, with 4 short, 4 long simple setae on inner margin, 6 short simple setae on outer margin.

Pereopod 2 (Fig. 6D) basis 1.15 times as long as remaining articles combined, with 20 plumose setae on inner margin.

Telson and uropods (Fig. 6E). Telson small, about half

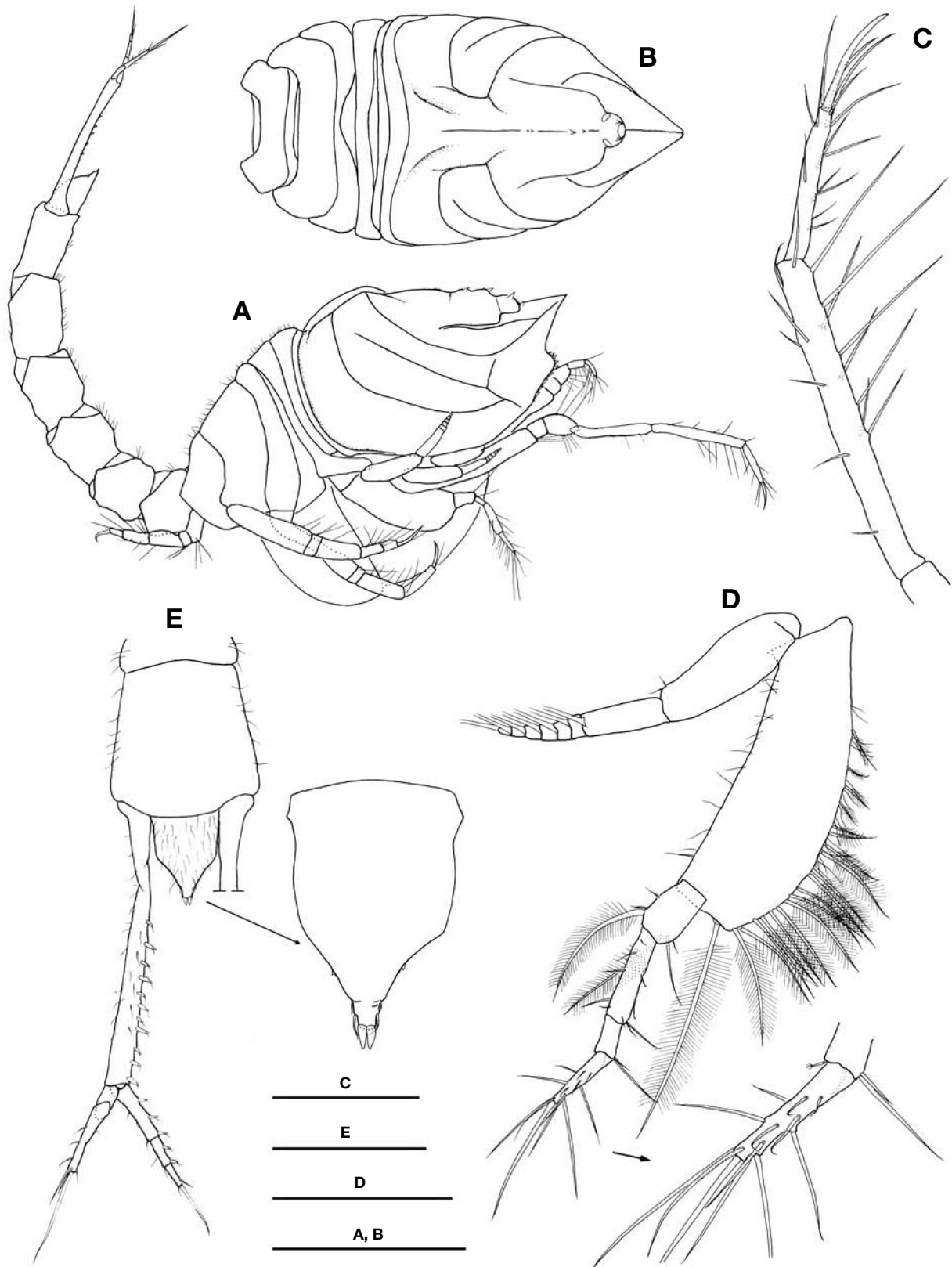


Fig. 6. *Dimorphostylis breviplicata* new species, female. A, Habitus, lateral; B, Cephalothorax, dorsal; C, Distal portion of pereopod 1; D, Pereopod 2; E, Telson, uropod and pleonite 6, dorsal. Scale bars: A, B=1.5 mm, C, E=0.3 mm, D=0.5 mm.

Table 1. Comparison of diagnostic characters among *Dimorphostylis breviplicata* n. sp. and related species

	<i>D. breviplicata</i> n. sp.	<i>D. acroplicata</i>	<i>D. brevicaudata</i>	<i>D. valida</i>
Body length (mm)	6.6 (male) 6.2 (female)	6.4 (male) 5.8 (female)	9.0 (male) 6.5 (female)	4.1 (male) 4.1 (female)
Transverse ridge on frontal lobe	Without	Without	Without	With
Pattern of middle oblique ridges on carapace	Short, not joining with submedian carina	Long, joining with submedian carina	Long, joining with submedian carina	Long, joining with submedian carina
Dorso-median process on pereonite 5	Weak	Weak	Strong	Weak
Pair of short stout lateral seta of female telson (adult male telson)	0 (0)	4-5 (2-3)	1 (unknown)	1 (0)
Length ratio of first to remaining articles combined of endopod of male uropod	1 : 0.7	1 : 0.5	1 : 0.5	1 : 0.7

length of pleonite 6, covered with numerous hair-like setae on dorsal surface, post-anal part with 1 pair of small teeth, 2 pairs of short simple setae on both lateral margins, 2 short stout setae on terminal margin. Uropod peduncle 3.4 times as long as telson, with 11 short stout setae on inner margin; endopod triarticulate, 0.4 times as long as peduncle, first article with 3 short stout setae on inner margin, second article with 2 short stout setae on inner margin, third article with 1 simple seta on inner margin, 1 short simple seta on outer corner, 1 long robust terminal seta; exopod biarticulate, 0.85 times as long as endopod, second article with 5 simple setae on surface and outer margin, 1 simple distal seta on inner margin, 2 simple setae (one of them long) on terminal margin.

Etymology. The specific name *breviplicata* is the combination of the Latin ‘*brevis*’, meaning short, and ‘*plica*’ meaning fold or ridge, alluding to the short middle oblique ridge on the side of the carapace.

Distribution. Korea (Yellow Sea, South Sea, and East Sea).

Remarks. *Dimorphostylis breviplicata* n. sp. is very similar to *Dimorphostylis brevicaudata* (Zimmer, 1903), *Dimorphostylis acroplicata* Harada, 1960 and *Dimorphostylis valida* Gamô, 1962 in that they have three pairs of oblique ridges on the carapace surface. However, this new species can be easily distinguished by the combination of the following features (Table 1): 1) the middle oblique ridge is short and not joined to the submedian carina (while it is long and joined with the submedian carina in the three species mentioned above); 2) the transverse ridge is absent on the frontal lobe (while in *D. valida* it appears); 3) a dorso-median process on the pereonite 5 is only barely visible (while in *D. brevicaudata* it appears strongly); 4) the female telson bears a pair of small teeth, on the other hand the adult male telson has no tooth or short stout seta (while in *D. acroplicata* the female and adult male bear 4-5 and 2 pairs of short stout setae, respectively); 5) the length ratio of the first to remaining articles combined on the male uropod is 1 : 0.7 (while it

is 1 : 0.5 in *D. brevicaudata* and *D. acroplicata*). Furthermore, the middle portion of the first oblique ridge has a branch ridge which is connected with the frontal ridge in *D. brevicaudata*, while the branch ridge is absent in *D. breviplicata* n. sp. and the other congeners.

Hong et al. (1998) reported that *D. brevicaudata* was new to the Korean fauna, which was based on adult female and subadult male specimens collected from Yellow Sea. However, our specimens of *D. breviplicata* n. sp. are undoubtedly the same as the specimen recorded by Hong et al. (*D. brevicaudata*) because of the following common features: 1) the pattern of the ridges on the carapace is the same, particularly the short middle oblique ridge; 2) the dorso-median process on the pereonite 5 is only weakly visible; 3) the proportion and armature of the propodus of the pereopod 2 is the same and is 2.2 times as long as the length of the dactylus; 4) the shape of the telson is the almost same.

The pattern of the ridges on the carapace does not change throughout the developing stage of the species and is one of the most important characters for separation of the *Dimorphostylis* species (Harada, 1960). Therefore, the specimen described by Hong et al. (1998) does not coincide with *D. brevicaudata*, which was originally described by Zimmer (1903), in regards to the unique pattern of the oblique ridges on carapace. Hong et al. (1998) might have overlooked the unique pattern of the oblique ridge on the carapace. The features mentioned above are important taxonomic characteristics that can be used to separate *D. breviplicata* n. sp. from its congeners.

Key to the Korean *Dimorphostylis* species

1. Frontal lobe with transverse ridge 2
Frontal lobe without transverse ridge 5
2. Post-anal section of male telson with 2-5 setae on both sides 3
Post-anal section of male telson without setae on both

- sides 4
3. Anterior oblique does not make right angle when it turns dorsally *D. namhaedoensis*
Anterior oblique ridge makes right angle when it turns dorsally *D. asiatica*
4. Middle seta of terminal margin of male telson less than twice as long as lateral setae *D. valida*
Middle seta of terminal margin of male telson about 3 times as long as lateral setae *D. hirsuta*
5. Carapace without frontal ridge *D. manazuruensis*
Carapace with 1 pair of frontal ridges 6
6. Anterior oblique ridge W-shaped and not parallel with middle oblique ridge *D. acroplicata*
Anterior oblique ridge curved and almost parallel with middle oblique ridge 7
7. Carpus of pereopod 1 very plump and propodus with 8 long simple setae on inner margin *D. echinata*
Carpus of pereopod 1 slender or normal and propodus with 3-6 long simple setae on inner margin 8
8. Middle oblique ridge long and parallel with anterior oblique ridge *D. longicauda*
Middle oblique ridge short and not parallel with anterior oblique ridge *D. breviplicata* n. sp.

Genus *Diastylis* Say, 1818

¹**Diastylis alaskensis* Calman, 1912 (Figs. 7, 8)

Diastylis alaskensis Calman, 1912: 641, figs. 51-57; Stebbing, 1913: 93; Lomakina, 1958: 128, fig. 67; Gamô, 1968: 151; Băcescu, 1992: 275.

Mesostylis alaskensis Derzarvin, 1926: 175, figs. 1-3 (cited in Lomakina, 1958).

Material examined. 2♂♂, Korea: Gijang-gun: Kori NU, Power site, 4 May 1990, Song SJ.

Description. Subadult male: Body (Fig. 7A) length 8.1 mm, excluding telson and uropods. Carapace (Fig. 7A, B) slightly shorter than 1/3 of body length, 1.5 times as long as wide, 1.8 times as long as deep, 1.25 times wide as deep; with 3 pairs of frontal ridges, 2 pairs of oblique ridges; frontal lobe with 2 transverse ridges; first pair of frontal ridges encircling proximal portion of pseudorostral lobes; second pair of frontal ridges connected with second transverse ridge on frontal lobe and meeting dorsally; third pair of frontal ridges not meeting dorsally; anterior oblique ridge beginning near antero-lateral margin, encircling middle portion of carapace; posterior oblique ridges almost parallel to anterior oblique ridge; antennal notch indistinct; antero-lateral corner round; antero-lateral margin faintly serrated; pseudorostral lobes

frontally projecting, 3 times as long as ocular lobe; ocular lobe round, with 3 lenses.

Thorax (Fig. 7A, B) 0.7 times as long as carapace length, 0.2 times as long as body length.

Abdomen (Fig. 7A, B) 0.95 times as long as cephalothorax.

Antenna 1 (Fig. 7C) peduncle triarticulate; first article 0.8 times as long as remaining articles combined, with numerous hairs, 1 simple seta, 1 strong plumose seta distally on surface; third article 1.15 times as long as second article, with 3 sensory setae, 2 simple setae near distal margin. Main flagellum 6-articulate; fourth article longest; fifth slightly shorter than fourth article, with 1 aesthetasc; sixth article small, with 1 aesthetasc, 1 sensory seta, 1 long, 1 short simple setae. Accessory flagellum 4-articulate, 0.5 times as long as main flagellum; third article longest, 0.55 times as long as second articles, with 1 simple seta on distal margin; fourth article very small, with 1 sensory seta, 2 long simple setae on terminal margin.

Maxilliped 3 (Fig. 7D) basis 2.6 times as long as remaining articles combined, with 26 plumose setae on inner margin, outer corner rather inflated, reaching midpoint of merus, with 5 long plumose setae.

Pereopod 1 (Fig. 7E) basis subequal in length to remaining articles combined, with 11 plumose setae on outer margin, about 24 plumose setae on inner margin; propodus 1.4 times as long as carpus, with 1 short and 3 long simple setae on inner margin, 1 short simple seta on outer corner.

Pereopod 2 (Fig. 8A) basis 0.85 times as long as remaining articles combined, with 14 plumose setae on inner margin, 20 plumose setae on outer margin.

Pereopod 3 (Fig. 8B) basis 0.9 times as long as remaining articles combined.

Telson and uropods (Fig. 8C). Telson 1.25 times as long as pleonite 6, post-anal section subequal to length of pre-anal section, with 7 pairs of short stout setae on both lateral margins, terminal margin with 2 short stout setae. Uropod peduncle twice as long as pleonite 6, with 17 short stout setae on inner margin; endopod triarticulate, 0.5 times as long as peduncle, first article longest, with 5 short stout setae on inner margin, second article with 3 short stout setae on inner margin, third article with 4 short stout setae on inner margin, 1 robust seta on terminal margin; exopod biarticulate, 1.25 times as long as endopod, second article with 8 short simple setae on outer margin, 1 simple seta on inner corner, 2 long simple setae terminal margin.

Female: Not known from Korean waters.

Distribution. Korea (East Sea), Japan, Russia, and USA (Alaska).

Remarks. *Diastylis alaskensis* is characterized by the cara-

Korean name: ¹*알라스카긴꼬리올챙이새우 (신칭)

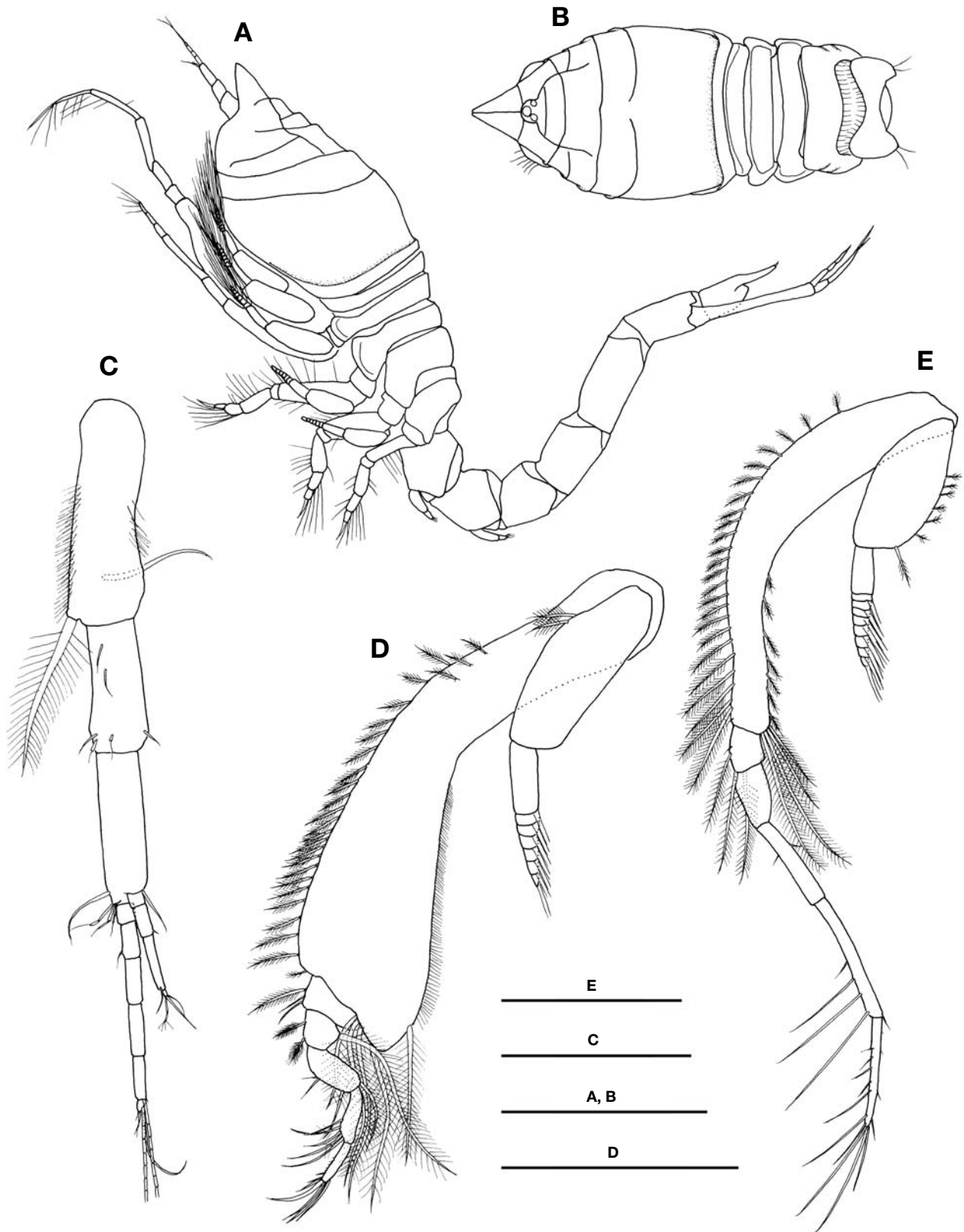


Fig. 7. *Diastylis alaskensis* Calman, subadult male. A, Habitus, lateral; B, Cephalothorax, dorsal; C, Antenna 1; D, Maxilliped 3; E, Pereopod 1. Scale bars: A, B=2 mm, C=0.2 mm, D=0.5 mm, E=1 mm.

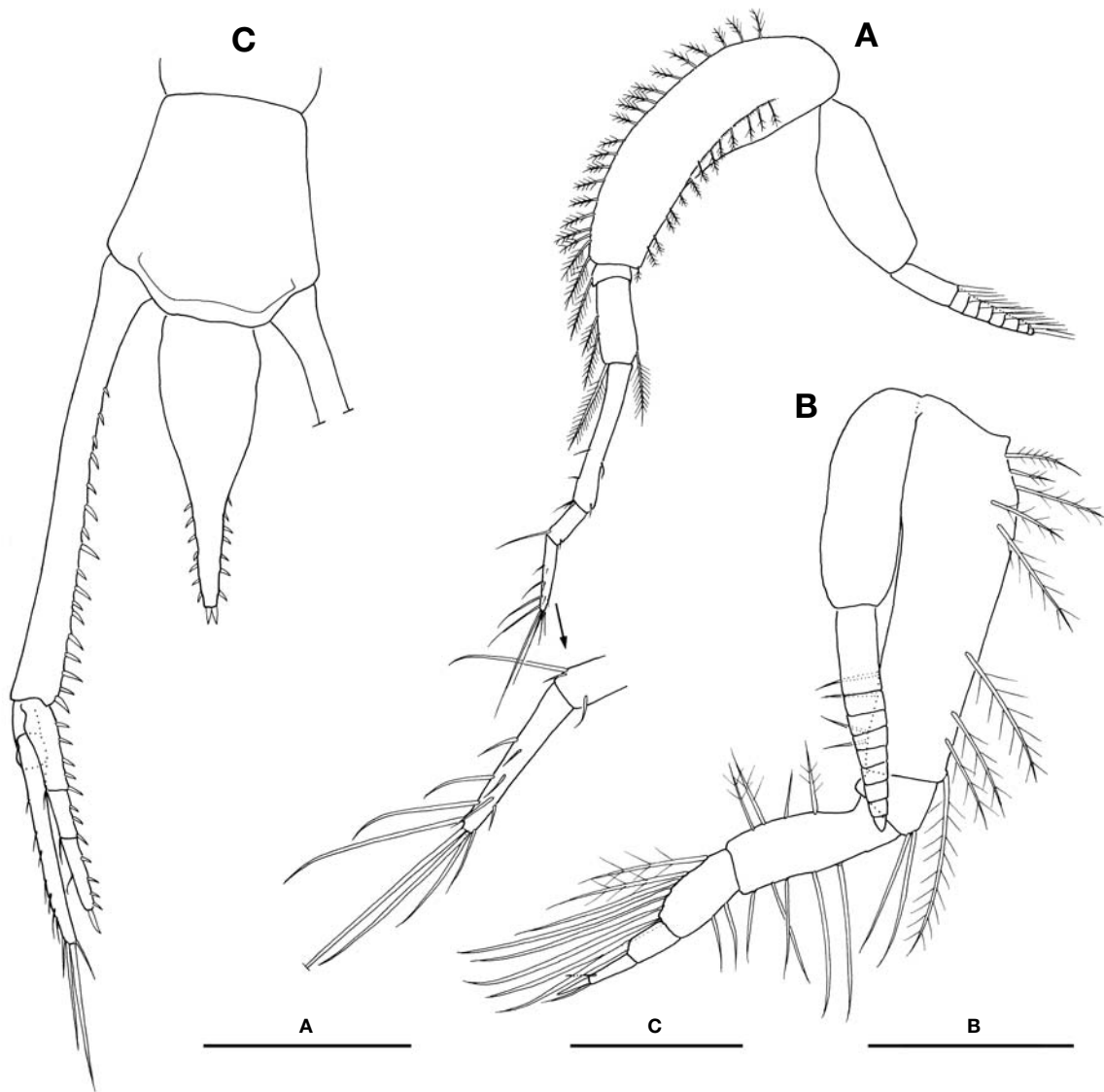


Fig. 8. *Diastylis alaskensis* Calman, subadult male. A, Pereopod 2; B, Pereopod 3; C, Telson, uropod and pleonite 6, dorsal. Scale bars: A=1 mm, B=0.3 mm, C=0.5 mm.

pace, which bears a large number of ridges, and a large body size. The most similar species is *D. lazarevi* Lomakina, 1955, which has a similar pattern of the ridges on the carapace, but *D. alaskensis* is distinct from *D. lazarevi* by a combination of the following features: 1) the telson has 2 short terminal setae, while it has 2 long setae in *D. lazarevi*; 2) the peduncle of the female uropod has 12-14 short setae, while it has 5-6 setae in *D. lazarevi*; 3) the basis of the pereopod 1 is subequal in length to the remaining articles combined and is decorated with about 35 plumose setae on the both lateral margins, while it is much longer (1.5 times as long as remaining articles combined) and decorated with about 20 plumose setae in *D. lazarevi*. This species occurs in the boreal habitat.

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